

What is claimed is:

~~1. A method of constructing a computer program developed with an object-oriented programming language, comprising the steps of:~~

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    declaring a base class as replaceable in a first source
file;

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        invoking, in the first source file, an operator to create
10  an object of the base class;

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compiling the first source file into a first module,  
including emitting an instruction to create an object of the  
base class in response to the invoking of the operator to  
create in the first source file;

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15      defining a replacement class inheriting from the base
      class in a second source file;

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instructing in the second source file to replace the base class with the replacement class to cause creation of an object of the replacement class when the instruction in the first module to create an object of the base class is executed;

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compiling the second source file into a second module;
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combining the first and second modules in an executable program.

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2. A method as in claim 1, wherein the object-oriented programming language is the C++ language.

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8. A computer-readable medium having computer programming source code comprising:

a first portion of the source code having:

a definition of a base class;

a declaration that the base class is replaceable during program execution;

an instruction invoking an operator to create an object of the base class; and

a second portion of the source code having:

a definition of a replacement class inheriting from the base class;

a declaration that the replacement class is a replacement for the base class; and

an instruction to replace the base class with the replacement class during program execution.

9. A computer-readable medium as in claim 8, wherein the object-oriented programming language is a compiled language.

10. A computer-readable medium as in claim 9, wherein the object-oriented programming language is the C++ language.

11. A computer-readable medium as in claim 8, wherein the object-oriented programming language is ~~an interpreted~~ language.

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    defining a replacement class inheriting from the base
class in a second source file;

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declaring in the second source file that the replacement  
class is a replacement for the base class;

entering in the second source file an instruction to  
replace the base class with the replacement class during  
5 program execution.

17. A method as in claim 16, wherein the object-oriented programming language is the C++ language.

10        ~~18.~~ A computer-readable medium having computer-executable instructions and data comprising:

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creation information for creating an object of a base
class;
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N      creation information for creating an object of a
15 replacement class derived from the base class;

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an instruction to register a replacement relationship  
between the base class and the replacement class;

an instruction to determine whether a registered replacement relationship between the base class and the replacement class exists upon receiving a request to create an object of the base class;

an instruction to access the creation information for the replacement class upon a determination of existence of the registered replacement relationship between the base class and the replacement class;

an instruction to create an object of the replacement  
class using the creation information for the replacement class

[illegible]

19. A computer-readable medium as in claim 18, wherein the instruction to create includes an instruction to call a virtual constructor of the replacement class identified in the creation information for the replacement class.

21. A computer-readable medium as in claim 18, further including an instruction to call a virtual destructor of the base class to delete the object of the replacement class.

22. A computer-readable medium having computer-executable instructions to performs steps for compiling a source listing in an object-oriented programming language into an executable module, comprising:

upon reading a statement in the source listing defining a first class as replaceable, emitting into the executable module a creation information block for the first class;

upon reading a statement in the source listing defining a  
25 second class inheriting from a first class as a replacement  
for the first class, emitting into the executable module a  
creation information block for the second class,

5        upon reading an instruction in the source listing to  
      create an object of the first class, emitting into the  
      executable module:

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24. A computer-readable medium as in claim 22, wherein the object-oriented programming language is the C++ language.